(h)(1) Vehicle types permitted by FRA to operate at cant deficiencies, E_u, greater than 3 inches but not more than 5 inches shall be considered qualified under this section to operate at those permitted cant deficiencies for any track segment. The track owner or railroad shall notify FRA in writing no less than 30 calendar days prior to the proposed implementation of such curving speeds in accordance with paragraph (f) of this section.

(2) Vehicle types permitted by FRA to operate at cant deficiencies, E_u, greater than 5 inches shall be considered qualified under this section to operate at those permitted cant deficiencies only for the previously operated or identified track segments(s).

(i) For vehicle types intended to operate at any curving speed producing more than 5 inches of cant deficiency, the following provisions of subpart G of this part shall apply: §§ 213.333(a) through (g), (j)(1), (k) and (m), 213.345, and 213.369(f).

(j) As used in this section—

(1) *Vehicle* means a locomotive, as defined in § 229.5 of this chapter; a freight car, as defined in § 215.5 of this chapter; a passenger car, as defined in § 238.5 of this chapter; and any rail rolling equipment used in a train with either a freight car or a passenger car.

(2) *Vehicle type* means like vehicles with variations in their physical properties, such as suspension, mass, interior arrangements, and dimensions that do not result in significant changes to their dynamic characteristics.

[78 FR 16101, Mar. 13, 2013]

§ 213.59 Elevation of curved track; runoff.

(a) If a curve is elevated, the full elevation shall be provided throughout the curve, unless physical conditions do not permit. If elevation runoff occurs in a curve, the actual minimum elevation shall be used in computing the maximum allowable posted timetable operating speed for that curve under § 213.57(b).

(b) Elevation runoff shall be at a uniform rate, within the limits of track surface deviation prescribed in § 213.63, and it shall extend at least the full length of the spirals. If physical conditions do not permit a spiral long enough to accommodate the minimum length of runoff, part of the runoff may be on tangent track.

[63 FR 34029, June 22, 1998, as amended at 78 FR 16101, Mar. 13, 2013]

§ 213.63 Track surface.

(a) Except as provided in paragraph (b) of this section, each track owner shall maintain the surface of its track within the limits prescribed in the following table:

Track surface (inches)	Class of track				
	1	2	3	4	5
The runoff in any 31 feet of rail at the end of a raise may not be more than	3½	3	2	1½	1
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	3	2¾	2¼	2	1¼
The deviation from zero crosslevel at any point on tangent or reverse crosslevel elevation on curves may not be more than	3	2	1¾	1¼	1
The difference in crosslevel between any two points less than 62 feet apart may not be more than* [1] [2]	3	2¼	2	1¾	1½
*Where determined by engineering decision prior to June 22, 1998, due to physical restrictions on spiral length and operating practices and experience, the variation in crosslevel on spirals per 31 feet may not be more than	2	1¾	1¼	1	¾

[1] Except as limited by § 213.57(a), where the elevation at any point in a curve equals or exceeds 6 inches, the difference in crosslevel within 62 feet between that point and a point with greater elevation may not be more than 1½ inches.

[2] However, to control harmonics on Class 2 through 5 jointed track with staggered joints, the crosslevel differences shall not exceed 1¼ inches in all of six consecutive pairs of joints, as created by seven low joints. Track with joints staggered less than 10 feet apart shall not be considered as having staggered joints. Joints within the seven low joints outside of the regular joint spacing shall not be considered as joints for purposes of this footnote.

(b) For operations at a qualified cant deficiency, E_u, of more than 5 inches, each track owner shall maintain the surface of the curve within the limits prescribed in the following table:

Track surface (inches)	Class of track				
	1	2	3	4	5
The deviation from uniform profile on either rail at the mid-ordinate of a 31-foot chord may not be more than	N/A[1]	N/A[1]	1	1	1
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	2¼	2¼	1¾	1¼	1
The difference in crosslevel between any two points less than 10 feet apart (short warp) shall not be more than	2	2	1¾	1¾	1½

[1] N/A—Not Applicable.

[78 FR 16101, Mar. 13, 2013]

§ 213.65 Combined track alinement and surface deviations.

On any curved track where operations are conducted at a qualified cant deficiency, E_u, greater than 5 inches, the combination of alinement and surface deviations for the same chord length on the outside rail in the curve, as measured by a TGMS, shall comply with the following formula:

$$\frac{3}{4} \times \left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| \leq 1$$

Where—

A_m = measured alinement deviation from uniformity (outward is positive, inward is negative).

A_L = allowable alinement limit as per § 213.55(b) (always positive) for the class of track.

S_m = measured profile deviation from uniformity (down is positive, up is negative).

S_L = allowable profile limit as per § 213.63(b) (always positive) for the class of track.

$$\left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| = \text{the absolute (positive) value of the result of } \frac{A_m}{A_L} + \frac{S_m}{S_L}.$$

[78 FR 16102, Mar. 13, 2013]

Subpart D—Track Structure

§ 213.101 Scope.

This subpart prescribes minimum requirements for ballast, crossties, track assembly fittings, and the physical conditions of rails.

§ 213.103 Ballast; general.

Unless it is otherwise structurally supported, all track shall be supported by material which will—

(a) Transmit and distribute the load of the track and railroad rolling equipment to the subgrade;

(b) Restrain the track laterally, longitudinally, and vertically under dynamic loads imposed by railroad rolling equipment and thermal stress exerted by the rails;

(c) Provide adequate drainage for the track; and

(d) Maintain proper track crosslevel, surface, and alinement.

§ 213.109 Crossties.

(a) Crossties shall be made of a material to which rail can be securely fastened.

(b) Each 39-foot segment of track shall have at a minimum—